

BANGALORE UNIVERSITY

DEPARTMENT OF CIVIL ENGINEERING

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BUB/CTE/2014-15/

Date: 12-06-2014

1. TESTING OF FINE AGGREGATES :

Sub: Testing of Fine Aggregates.

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 07-06-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2007)			Remarks
		Percentage Passing			
		Zone-I	Zone-II	Zone -III	
04.75	98.00	90-100	90-100	90-100	The Sample Conforms to Grading Zone-II
02.36	86.30	60-95	75-100	85-100	
01.18	72.10	30-70	55-90	75-100	
600. mic	46.00	15-34	35-59	60-79	
300.mic	21.30	5-20	8-30	12-40	
150.mic	3.20	0-10	0-10	0-10	

TABLE 1.2 ;

Sl No	Test Conducted	Sample	Results	Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2007)
1	Silt Content	001	1.44%	Not more than 8%
2.	Specific Gravity	----	2.59	-----

* As furnished by Client.

The Results relate only to the items tested.

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BUB/CTE/2014-15/

Date: 12-06-2014

1. TESTING OF COARSE AGGREGATES (40 mm):

Sub: Testing of Coarse Aggregates.

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 07-06-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing 40 mm Sample	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
		Single size	Graded
40mm	97.50	85-100	95 - 100
20mm	64.00	0 -20	30- 70
10mm	23.60	0 -5	10- 35
4.75mm	Nil	-----	0 - 5

TABLE 12 :

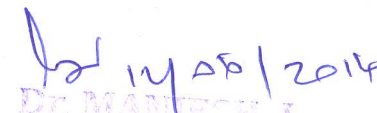
SL No	Test conducted	Sample No	Results	Requirements as per IS:383-1970 & Test Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2007)
1.	Flakiness Index	As above	15.20 %	Not to exceed 25 %
2.	Crushing value	-----	25.70%	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

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BUB/CTE/2014-15/

Date: 16-06-2014

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 07-06-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

PHYSICAL TESTS ON CEMENT

Brand* : Birla
Grade * : 53
Type * : OPC
Date : 08-06-2014 to 15-06-2014

SL No	Name of Test	Results	Requirements as per IS 12269-1987
		Cement Sample	
1	Initial setting time	155 min	Shall not be less than 30 min
2	Final setting time	260min	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	2.40%	Not to exceed 10.0%
4	Soundness test (by Le-Chatelier's method)	1.60 mm	Shall not be more than 10 mm
5	Compressive strength		
	a) 3 days (average of three results)	28.70 N/ Sq mm	Shall not be less than 27 N/Sqmm
	b) 7 days (average of three results)	40.60N/Sq mm	Shall not be less than 37N/Sqmm

* As furnished by Client.

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16/06/2014
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BUB/CTE/2014-15/

Date: 12-06-2014

1. TEST REPORT ON REINFORCEMENT STEEL:

Sub: Testing of Reinforcement Steel of diameter 10mm.

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 07-06-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

TABLE – 1

SL No	Details	For 10mm	
		Test Results	Min Req as per IS 1786-2008
01	Observed diameter of bar	10.0mm	10.0mm
02	Observed Wt/m Length Kg/m	0.620	0.567
03	Proof stress/Yield stress, f_y , N/mm^2	558.0	500.0
04	Bend/ Re bend Test	Ok	---
05	Percentage of Elongation, %	19.40	12.00
06	Ultimate Tensile Strength N/mm^2	618.0	545.0

*As furnished by Client.

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BUB/CTE/2014-15/

DATE: 17-07-2014

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (28 days Compressive Strength)

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 16-07-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M₂₀

TABLE 1.1 :

Sl No	Location/ Identification *	Date of Casting*	Date of Testing	Age in Days	C/S Area in Mm ²	Maximum Load in K.N	Compressive Strength (N/ mm ²)	Avg. Value
1	001	18-06-14	16-07-14	28	22500	500	22.22	22.81
	002	"	"	"	"	510	22.66	
	003	"	"	"	"	530	23.55	

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BUB/CTE/2014-15/

Date: 09-08-2014

TEST REPORT ON WET MIX MACADAM MIX (GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 06-08-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, IV Revision- 2001
53.00	100.00	100
45.00	96.30	95-100
26.50	---	-
22.40	74.20	60-80
11.20	44.60	40-60
4.75	39.00	25-40
2.36	25.80	15-30
0.600	18.00	8-22
0.075	3.90	0-8

TABLE 1.2 :

SL No	Test conducted	Sample No	Results	Requirements as per IS:383-1970 & Test Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2007)
1	Flakiness & Elongation Index	01	24.60%	Not more than 30 %
2	Impact Value	----,,----	25.70 %	Not more then 24.00 % for BC Not more then 27.00 % for DBM Not more then 30.00 % for BM/WMM

*As Furnished by Client

The Results relate only to the items tested.

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BUB/CTE/2014-15/

Date: 22-08-2014

TEST REPORT ON BITUMINOUS MIXES (BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: Testing of Bitumen Premix Sample (Semi Dense Bituminous Concrete-SDBC).

{Project*: Improvements to Roads and Drains at Bhuvaneshwarinagar in Ward No.06,
Byatarayanapura Sub-Division}

Ref.: Letter No. AEE/BPSD/BBMP/23/2014-15, dated 19-08-2014

Sample supplied to lab by: Assistant Executive Engineer,
Byatarayanapura Sub-Division.
BBMP, Bangalore.

Name of the Contractor/Agency*: Sri.V.Chandrappa, Contractor, Bangalore.

TEST RESULTS:

1. The bitumen content obtained after subjecting the sample for Bitumen
Extraction test = 5.10%
2. Gradation Test :

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-15 of MORTH Specifications-2001 (Grading - 2)
13.2	100	100
9.5	95.80	90—100
4.75	45.10	35—51
2.36	26.00	24—39
1.18	18.20	15—30
0.3	13.20	09—19
0.075	4.20	03—08

*As Furnished by Client

The Results relate only to the items tested.

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Date: 22-08-2014

TABLE 12 :

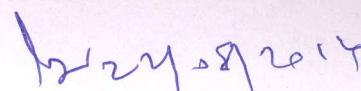
SL No	Test conducted	Sample No	Results	Requirements as per IS:383-1970 & Test Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2007)
1	Flakiness & Elongation Index	01	25.10%	Not more than 30 %
2	Impact Value	----,,----	24.90 %	Not more then 24.00 % for BC Not more then 27.00 % for DBM Not more then 30.00 % for BM/WMM
3	Water absorption	----,,----	0.50%	Not more than 1.0 %
4	Stripping test. (Coating and stripping of Bitumen aggregate mixtures)	----,,----	97.00 %	Minimum retained coating 95.0 %

*As Furnished by Client

The Results relate only to the items tested.


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